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Claims 1-9 have been rejected under 35 U.S.C. 102 (b) as being anticipated by Sendall (US 4,975,864). Applicant respectfully traverses the rejection for on the following grounds:

Sendall (US 4,975,864) discloses a system and a method which implements scene based non- uniformity compensation of the detector elements of a staring infrared focal plane array imaging system. Sendall mentions that conventional non-uniformity compensation methods are employed utilizing spiral scan techniques which involve moving the detector line of sight in a spiral pattern to smear the image and provide a somewhat uniform scene on which the nonuniformity compensation can be made (column 1, 23-26 and 34-37). In the summary of the invention (column 1, lines 51-61), Sendall describes his invention as not requiring the line of sight of the Imager to leave the target at any time during the flight. Specifically, his apparatus and method refer to non-uniformity compensation of a staring infrared focal plane array imaging system or other video imaging system.

According to Sendall, a signal processor is used with a focal plane array infrared imaging system which implements non-uniformity compensation of the detectors comprising the array (column 1, lines 62-67). The processing accomplished by the invention of Sendall normalizes all detector elements in the array such that they all appear to respond to infrared energy in an identical manner (column 2, lines 2-5). A median filter selectively implements a plurality of filters and is coupled to an anti-median calculator which computes the anti-median of the selected output of the median filter. This value comprises the difference between the central pixel value of a particular filter and the median value of all pixels in the cross (X) or plus (+) shaped filter. A normalization filter comprises a comparator circuit to sample each signal from the detector array, comparing its value to a preset value indicative of an expected scene intensity level determined by the operator. The output signals of the anti-median calculator and average filter comprise sign information which is indicative whether the central pixels values is less than, equal to or greater than the

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median, or whether each individual signal is less than, equal to or greater than the preset value, as the case may be (column 2, lines 6-26).

Moreover, the median filter comprises a plurality of registers for sampling a matrix of output signals from the array generally centred around a central signal or pixel which corresponds to the particular detector element being compensated. In the disclosed embodiment, a 3 x 3 array of registers is used (column 2, lines 42-46).

Thus, Sendall's solution of non-uniformity compensation is based on the assumption that pixels in the neighbourhood of a pixel to be compensated should comprise the same or similar pixel values. However, Sendall's method relates to staring infrared imaging systems. As mentioned before, the line of sight of the imager is constantly directed to the target at any time during the flight (column 1, lines 59-61).

Consequently, Sendall does not use the information provided when the sensor array is scanning a scene.

In contrast, the present invention relates to the scanning of scenes with a detector which has a multiplicity of sensor elements for producing image signals. For the inhomogeneity correction, information which contains for each sensor element an overall value representing the respective scanned area is evaluated. If the difference between these overall values satisfies (for each sensor element) a predetermined magnitude criterion, the image signals are corrected such that the magnitude criterion is no longer satisfied. Consequently, the method recited in claim 1 of the present application is not anticipated by Sendall.

Accordingly, Applicant submits that the present invention is neither anticipated nor obvious in view of Sendall, or a combination of Sendall and other documents, since Sendall explicitly excludes that the sensor array should be moved relative to the target. Even if the sensor array were to be moved, Sendall's method only suggests comparing the pixel values of neighbouring pixels at a single point in time. Sendall does not suggest integrating the signal of a sensor element over time as is automatically done according to the present invention, since the overall value for

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each of the sensor elements represents a part of a scanned scene (see for example last paragraph on page 3 of the specification of the present application).

White (US 5,721,427) relates to systems for correcting image nonuniformities in images obtained from focal plane arrays of infrared imaging systems. It is the object of White's invention to provide a cost-effective reliable correction system that does not degrade scene details when the scene is stationary.

Again, the scene is not scanned and the non-uniformity correction system is designed to work when the scene is stationary.

Chen (US 6,211,515 B1) discloses a system and method adapted for use with a focal plane array of electromagnetic energy detectors to receive first and second frames of image data from electromagnetic energy received from at least a portion of a scene. The first frame is a focussed frame and the second frame is blurred (summary of the invention, column 2, lines 7-16). According to the embodiment described with reference to Fig. 1 (column 3, lines 27-42 and 52-60), infrared energy from a scene is reflected by a deformable mirror to a focal plane array within a camera. The deformable mirror can provide blurred video frames between focussed frames of video. The purpose of the blurring function is to uniformly spread the energy within the scene over the seeker field of view. These frames should then only exhibit non-uniformities due to the focal plane array.

Again, the scene is not scanned. In order to calibrate the outputs of different pixels, the deformable mirror is used.

In contrast, the present invention scans a scene and uses the information produced by scanned areas for inhomogeneity correction. For example, if a line of sensor elements is used instead of a two-dimensional field of sensor elements, and if the line array is used for scanning the scene, the inhomogeneity correction according to the present invention is performed with less effort than any process disclosed in the documents cited in the Office Action of February 9, 2007. The scanning process of

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the present invention makes it possible to obtain the inhomogeneity correction as a "side product". None of the cited documents discloses or suggests such a solution.

Moreover, since the scene is scanned, it is very likely that each sensor element "sees" the same or similar regions of the scene as neighbouring sensor elements and that these regions are typical for the whole scene. Therefore, the inhomogeneity correction is based on a realistic representation of the scene.

On the other hand, relative movement of the sensor and the scene by just a few pixels, or in a manner which would allow each sensor element to just view along a small part of the scene's dimensions, would not result in a realistic representation of the scene. If the scene inhomogeneity correction were to be performed from time to time, between the normal operation of the sensor, this would lead to non-realistic correction results.

Applicant therefore requests reconsideration of the rejection and the early issuance of a notice of allowance.

Respectfully submitted,

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